and Eternal Source. Strengthened by this high thought,—our feelings raised and spiritualized by this habit,—there is no danger that we shall give place to the weak apprehension (which is but a subtle form of unbelief itself), that any portion of Truth can ever prove inconsistent with any other. And the same principle, while it saves us from slavish *fear*, will also guard us from *presumption*. Standing in the presence of confessed and established truth, we shall feel that we are treading upon holy ground; and we shall demean ourselves, not with the elation and pride of conquest, but with the devotion of worship and of love."

It was Resolved,—That the President be requested to permit his Address to be printed in the Proceedings of the Academy.

The Rev. Charles Graves read a paper by Mr. George Boole, of Lincoln, on a Certain Definite Multiple Integral.

It has for some time been known that the evolution of definite multiple integrals can, in many cases, be effected by the employment of discontinuous functions. In illustration of this fact, the author notices the researches of M. Lejeune Dirichlet, founded on the properties of the discontinuous integral $\int_0^\infty \frac{d\phi \sin\phi \cos r\phi}{\phi}$, and those of Mr. Ellis based on Fourier's theorem. In his own investigations he employs the formula of triple integration,

$$\frac{f(x)}{t^n} = \frac{1}{\pi\Gamma(n)}\int_{-\infty}^{\infty}\int_0^{\infty}\int_0^{\infty} da\,dv\,dw \cos\left((a-x)v - tw + n\frac{\pi}{2}\right)w^{n-1}f(a),$$

by the aid of which he deduces the value of the multiple definite integral,

$$\text{v} = \iint\ldots \frac{dx_1\,dx_2\ldots dx_n f\left(\frac{x_1^2}{h_1^2}+\frac{x_2^2}{h_2^2}+\ldots+\frac{x_n^2}{h_n^2}\right)}{\{(a_1-x_1)^2+(a_2-x_2)^2\ldots+(a_n-x_n)^2\}^{i}},$$

the limits of the integrations being given by the condition

$$\frac{x_1^2}{h_1^2} + \frac{x_2^2}{h_2^2} \cdot \cdot + \frac{x_n^2}{h_n^2} = 1.$$

The result of his analysis is

$$\mathrm{v} = (-)^{i-\frac{n}{2}} \frac{h_1 h_2 \cdot \cdot h_n \pi^{\frac{n}{2}}}{\Gamma(i)} \int_0^\infty \frac{ds \left(\frac{d}{d\sigma}\right)^{i-\frac{n}{2}} f(\sigma)}{s^{i-\frac{n}{2}+1} \{(s+h_1^2)(s+h_2^2) \cdot \cdot (s+h_n^2)\}^{\frac{1}{2}}},$$

in which

$$\sigma = \frac{a_1^2}{s+h_1^2} + \frac{a_2^2}{s+h_2^2} \cdot \cdot + \frac{a_n^2}{s+h_n^2},$$

and $f(\sigma)$ is a discontinuous function, which is supposed to vanish when $\sigma \angle 1$.

As particular examples of this result, the author deduces the attraction of an ellipsoid on an external or internal point, when the force varies as the inverse square and as the inverse fourth power of the distance. In the latter case some remarkable consequences are seen to flow from the discontinuous character of the function $f(\sigma)$. When the density is uniform, and the point external, all the elements of the integral which precede or follow the break in that function vanish, while at the break a single finite element occurs. This gives a finite algebraic expression for this case of an ellipsoid's attraction. When the ellipsoid is of variable density, and the point external, the attraction is given partly by a finite algebraic expression, and partly by a definite single integral.

Similar remarks apply to all inverse even powers of the distance, except the square.

Dr. Allman read a paper on the larva state of Plumatella, and on the anatomy of Polycera quadrilineata.

In this paper the author described the occurrence in *Plumatella fruticosa*, Allm., of a larva state presenting a very different form from that assumed by the mature animal. This larva was discovered in a glass of water containing specimens